

IN THE CLAIMS:

Please amend the claims as follows:

1-24 (Canceled).

25 (Currently Amended). A method of forming a hybrid arched overfilled bridge structure comprising:

- A) defining a first pathway;
- B) defining a second pathway spaced above said first pathway;
- C) providing a plurality of pre-cast side elements;
- D) erecting the pre-cast side elements in two rows along the first pathway to extend toward the second pathway and partially over the first pathway; and
- E) casting in place a crown sector element between two pre-cast side elements to extend from one pre-cast side element of the two pre-cast side elements to the other side element of the two pre-cast side elements so the cast-in-place crown sector overhangs the first pathway and combines with the two pre-cast side elements to define a bridge over the first pathway, the cast-in-place crown sector having a surface exposed to the first pathway.

26 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 further including providing a casting table for the production of side elements having an arcuate form surface and an adjustable end and a connection element on another end, moving the adjustable end, and pouring concrete mix onto the form surface of the casting table to form an arcuate pre-cast side element.

27 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 further including providing a casting table having an arcuate form surface and pouring concrete mix onto the form surface of the casting table to form an arcuate pre-cast side element.

28 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 27 further including moving the form surface of the casting table.

29 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 further including using a crown sector form which has a form surface supported by a frame support located between the two pre-cast side elements and pouring concrete mix onto the crown sector form surface.

30 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 29 further including moving the crown sector form surface and the form associated therewith into a desired position.

31 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 30 wherein the step of moving the crown sector form surface and the form support associated therewith includes using hydraulic elements and wheels to move the crown sector form surface and form support.

32 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 26 further including orienting the form surface of the casting table to define tangential angles of the arcuate pre-cast side element formed on the casting table, with the tangential angles such that a gradient of no more than about 20° to 30° is established.

33 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 26 further including orienting the form surface of the casting table to define tangential angles of the arcuate pre-cast side element formed on the casting table, with the tangential angles such that a gradient of more than 30° is established.

34 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 29 further including sealing ends of the crown sector form surface.

35 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 26 further including vibrating the casting table.

36 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 35 further including compacting the concrete mix.

37 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 further including forming a structural connection between the cast-in-place crown sector element and two side elements.

38 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 further including beveling edges at the crown sector element.

39 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 wherein the step of providing side elements includes forming pre-cast side elements in a horizontal orientation and the step of erecting the pre-cast side elements includes lifting the pre-cast side elements in place.

40 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 39 wherein the step of casting in place a crown sector element includes providing a purpose built traveling form and pouring a concrete mix onto the traveling form surface and form support.

41 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 39 wherein the step of casting in place a crown sector element includes forming shrinkage joints in the crown sector element.

42 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 40 further including supporting the pre-cast side elements against the traveling form surface prior to pouring the concrete mix onto the form surface.

43 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 40 further including knocking down the traveling form after the crown sector has been formed and reusing the form.

44 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 28 wherein said step of moving the form surface of the casting table includes orienting the form surface at a first orientation to slope less than a castable concrete gradient, pouring part of the concrete mix, compacting the poured concrete mix, re-orienting the form surface into a second orientation and pouring another part of the concrete mix.

45 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 25 wherein said step of casting in place a crown sector element includes providing reinforcing elements and pouring concrete mix over the reinforcing elements.

46 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 45 further including waterproofing the side elements and the cast-in-place crown sector element.

47 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 46 further including backfilling.

48 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 26 further including heating the side elements while the concrete mix hardens.

49 (Original). The method of forming a hybrid arched overfilled bridge structure defined in Claim 48 further including heating the crown sector element after the crown sector element has been cast in place while the concrete mix hardens.

50 (Original). A method of forming a hybrid arched overfilled bridge structure comprising:

- A) defining a first pathway;
- B) defining a second pathway spaced above said first pathway;
- C) forming a plurality of pre-cast side elements using a casting table;
- D) adjusting the casting table during the formation of a side element;

- E) providing each side element with a connecting element;
- F) placing two footing strips adjacent to the first pathway, with one footing strip on each side of the first pathway;
- G) supporting one end of each of the pre-cast side elements on one of the footing strips;
- H) forming two rows of footing strips along the first pathway . and orienting each pre-cast side element to extend from the footing strip toward the second pathway and partially over the first pathway with the connecting element extending over the first pathway;
- I) placing a crown sector formwork on the footing strips;
- J) adjusting the crown sector formwork;
- K) supporting the pre-cast side elements against the formwork;
- L) pouring a concrete mix onto the crown sector formwork and onto the connecting elements; and
- M) casting in place a crown sector element on the formwork and between the two rows of pre-cast side elements to extend from one pre-cast side element in one row of the two rows of pre-cast side elements to a second pre-cast side element in a second row of the two rows of pre-cast side elements; and
- N) locking the crown sector element to the side elements so the cast-in-place crown sector combines with the pre-cast side elements to define a structure over the first pathway.

51 (Original). A method of forming a hybrid arched overfilled bridge structure comprising:

- A) defining a first pathway;
- B) defining a second pathway spaced above said first pathway;
- C) forming a plurality of arcuate pre-cast side elements using a casting table having an arcuate work surface;
- D) heating a pre-cast side element while it hardens after pouring;
- E) adjusting the casting table during the formation of a side element;
- F) providing each side element with a connecting element;
- G) placing two footing strips adjacent to the first pathway, with one footing strip on each side of the first pathway;
- H) supporting one end of each of the pre-cast side elements on one of the footing strips;

- I) forming two rows of footing strips along the first pathway and orienting each pre-cast side element to extend from the footing strip toward the second pathway and partially over the first pathway with the connecting element extending over the first pathway;
- J) placing a crown sector formwork on the footing strips;
- K) adjusting the crown sector formwork using mechanical elements;
- L) providing reinforcing elements adjacent to the crown sector formwork;
- M) sealing ends of the crown sector form;
- N) supporting the pre-cast side elements against the formwork;
- O) pouring a concrete mix onto the crown sector formwork and onto the connecting elements and onto the reinforcing elements;
- P) casting in place a crown sector element on the formwork and between the two rows of pre-cast side elements to extend from one pre-cast side element in one row of the two rows of pre-cast side elements to a second pre-cast side element in a second row of the two rows of pre-cast side elements;
- Q) heating the concrete mix on the crown sector form during curing;
- R) locking the crown sector element to the side elements so the cast-in-place crown sector combines with the pre-cast side elements to define a bridge over the first pathway;
- S) forming an end treatment at each end of the bridge; and
- T) backfilling around the bridge.

52-65 (Canceled).

66 (Currently Amended). A method of forming a hybrid arched bridge structure over a first pathway, comprising:

- A) providing a plurality of pre-cast side elements;
- B) erecting the pre-cast side elements in two spaced apart rows along the first pathway, each pre-cast side element extending partially over the first pathway; and
- C) casting in place one or more crown sector elements between the two spaced apart rows of pre-cast side elements such that the one or more crown sector elements overhang the first pathway and connect the two spaced apart rows of pre-cast side elements to define a bridge over the first pathway;

D) wherein at least one of the one or more crown sector elements has a surface exposed to the first pathway.

67 (Previously Presented). The method of claim 66 further comprising placing overfill material atop at least a portion of the bridge.

68 (Previously Presented). The method of claim 66 wherein multiple crown sector elements are cast in place and each crown sector element extends along the first pathway for a length that connects multiple pre-cast side elements of each row.

69 (New). A method of forming a hybrid arched overfilled bridge structure comprising:

- A) defining a first pathway;
- B) defining a second pathway spaced above said first pathway;
- C) providing a plurality of pre-cast side elements;
- D) erecting the pre-cast side elements in two rows along the first pathway to extend toward the second pathway and partially over the first pathway;
- E) casting in place a crown sector element between two pre-cast side elements to extend from one pre-cast side element of the two pre-cast side elements to the other side element of the two pre-cast side elements so the cast-in-place crown sector combines with the two pre-cast side elements to define a bridge over the first pathway; and
- F) providing a casting table for the production of side elements having an arcuate form surface and an adjustable end and a connection element on another end, moving the adjustable end, and pouring concrete mix onto the form surface of the casting table to form an arcuate pre-cast side element.